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Sunao Kakizaki

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EXAMINER

KIM, DAVID S

ART UNIT

PAPER NUMBER

2613

DATE MAILED: 04/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/058,781

Applicant(s)

KAKIZAKI ET AL.

Examiner

David S. Kim

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 7-10 and 18-20 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-14 is/are allowed.
- 6) ☒ Claim(s) 1-4, 15-17 and 21 is/are rejected.
- 7) ☒ Claim(s) 5 and 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### Election/Restrictions

1. Applicant's election with traverse of **Invention I (claims 1-6, 11-17, and 21)** in the reply filed on 13 January 2006 is acknowledged. The traversal is on the following ground(s):

“However, applicants submit that contrary to the position set forth by the Examiner, features of Invention I, referred to by the Examiner as the subcombination, are recited in the features of Invention II, referred to by the Examiner as the combination, such that applicants submit that the optical reflection monitors of claim 1 of Invention I, for example, are required by the features of the claims of Invention II” (p. 2, 1<sup>st</sup> paragraph).

This is not found persuasive because the claims of Invention II (the combination) lack specific characteristics (e.g. the “optical reflection monitors”) of the claim 1 of Invention I (the subcombination). As stated in the previous Office Action, Applicant's initial presentation of Inventions I and II as subcombination and combination indicates that the specific characteristics required by the subcombination claims (claims 1-6, 11-17, and 21) are not required by the combination claims (claims 7-10 and 18-20). Moreover, although Applicant states that the “optical reflection monitors” of claim 1 of Invention I are required by the *features* of the claims of Invention II, Examiner did not find these “optical reflection monitors” in the claims of Invention II. Without further detailed explanation as to how the specific characteristics (e.g., the “optical reflection monitors”) of the subcombination claims (claims 1-6, 11-17, and 21) are required by the combination *claims* themselves (claims 7-10 and 18-20), Applicant's statement is unpersuasive. Accordingly, the requirement is still deemed proper and is therefore made FINAL.

2. **Claims 7-10 and 18-20** are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 13 January 2006.

### *Claim Objections*

3. **Claims 2 and 15-16** are objected to because of the following informalities:

In claim 2, last line, “the paths” is used where -- the path -- may be intended. There is no antecedent basis for more than one path.

Art Unit: 2613

In claim 15, line 2, "the optical switching device" is used where -- an optical switching device -- may be intended. Also, in the "after selecting" limitation, "the CPU" is used where -- a CPU -- may be intended. Otherwise, antecedent basis is lacking.

In claim 16, line 2, "performing a setting" is inconsistent with the antecedent "performing a settings" in parent claim 15.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Asahi**

4. **Claims 1 and 21** are rejected under 35 U.S.C. 102(e) as being anticipated by Asahi (U.S. Patent No. 6,704,508 B1).

**Regarding claim 1**, Asahi discloses the optical switching device (Fig. 6) comprising the reflection monitors (photodiodes 7-1 to 7-n monitor the reflections from reflectors 10-1 to 10-n).

**Regarding claim 21**, Asahi discloses the optical switching device (Fig. 6) comprising the reflection monitors (photodiodes 7-1 to 7-n monitor the reflections from reflectors 10-1 to 10-n), thereby enabling immediate notification of abnormal conditions (col. 5, l. 66 – col.6, l. 4) in optical communication cables on the optical transmission paths.

**Harel et al.**

5. **Claims 1-4** are rejected under 35 U.S.C. 102(e) as being anticipated by Harel et al. (U.S. Patent No. 6,549,692 B1, hereinafter "Harel").

Art Unit: 2613

**Regarding claim 1**, Harel discloses the optical switching device (e.g., Figs. 2A-2D) comprising the reflection monitors (e.g., the arrangement of components from beam splitters 210 to detectors 230 monitors the reflections from switching elements 120).

**Regarding claim 2**, Harel discloses wherein the reflection monitors detect reflected light on a path (e.g., path of optical signals 37) transmitting an optical signal input to the optical switching device, and locate positions (detectors 230 in Fig. 4 locate the spatial positions of the reflections from the various switching elements 120) of reflection on the path.

**Regarding claim 3**, claim 3 is an apparatus claim that corresponds largely to the apparatus claim 2. Therefore, the recited means in apparatus claim 2 read on the corresponding means in apparatus claim 3. Claim 3 also includes limitations absent from claim 2. Harel also discloses these limitations:

the multistage-connecting (note the multiple stages of switching elements 120 in Figs. 2A-2D) of a plurality of optical switching devices.

**Regarding claim 4**, Harel discloses the optical branching circuit (beam splitter(s) 210 in Figs. 2A-2D) that separates the optical signal or the reflected light, and the optical detector (detectors 230) that monitors the optical signals or the reflected light.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the

Art Unit: 2613

examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Lin et al.**

8. **Claims 15-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al. (U.S. Patent No. 6,591,029 B1, hereinafter "Lin").

**Regarding claim 15**, Lin discloses a method comprising:

the performing step of providing a setting for switching of optical switches (implied by the switch controller 50 in Fig. 2 providing switching connections between switching elements 120, col. 5, l. 7-49);

and

after selecting an optical reflection monitor circuit by a CPU (implied by receiving signals from detectors 33), performing A/D conversion (ADC 338 in Figs. 9-10) of a monitored signal from the optical reflection monitor circuit, transferring the converted monitored signal to a monitoring and control unit (controller 50 in Figs. 9-10).

Lin does not expressly disclose:

the step of setting a **switching information register** by a switching control unit in the optical switching device; and

the step of setting an **optical reflection monitoring register** therein.

However, it is conventional and obvious for switching connections/information to be registered within the controller, e.g., controller 50. A conventional motivation is to inform the controller about which connections are currently set so that a practitioner will know where input signals are expected to go through the switch. Otherwise, the input signals may not arrive at the desired destinations.

Additionally, notice that Lin discloses the processing of optical reflection monitoring signals (signals that respond to back-reflected signals in Figs. 9-10 processed in controller 50). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to set an optical reflection monitoring register in response to these monitoring signals. One of ordinary skill in the art

Art Unit: 2613

would have been motivated to do this since Lin teaches an example of processing that conventionally requires the storage of information related to optical reflection monitoring. More exactly, Lin teaches the use of a readable display that is dependent on information related to optical reflection monitoring (col. 9, l. 56-59). Additionally, Lin teaches another example that would conventionally require the storage of information related to optical reflection monitoring: the controller 50 determines apparatus alignment based on information related to optical reflection monitoring (col. 9, l. 50-52; col. 10, l. 14-16).

**Regarding claim 16**, Lin does not expressly disclose the step of performing including a step of setting the optical switch switching information into *the switching information register*.

However, simply consider the name of the term "switching information register". The term itself implies that the switching information of the optical switch of Lin would be set/registered in the "switching information register" itself.

**Regarding claim 17**, Lin discloses threshold teachings (col. 6, l. 46-53).

Lin does not expressly disclose the comparison and binary writing limitations of claim 17. However, notice that the purpose of Lin's optical reflection monitoring means is to provide a binary answer. That is, the purpose of the examples of Figs. 9-10 of Lin is to provide either one answer ("1") that the apparatus is aligned or ("0") that the apparatus is not aligned (col. 9, l. 50-52; col. 10, l. 14-16). Moreover, when one employs a threshold, as Lin does (col. 6, l. 46-53), it is conventional practice to compare detected values with this threshold. Accordingly, the limitations of claim 17 are deemed to be obvious.

#### ***Allowable Subject Matter***

9. **Claims 5-6** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. **Claims 11-14** are allowed.

#### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Brener et al. is cited to show details of some optical reflection monitors (e.g., Figs. 10A-10B). Ma et al. is

Art Unit: 2613

cited to show optical switching devices with optical reflection monitors between the input and output ports (e.g., Fig. 1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Kim whose telephone number is 571-272-3033. The examiner can normally be reached on Mon.-Fri. 9 AM to 5 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth N. Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DSK



**KENNETH VANDERPUYE**  
**SUPERVISORY PATENT EXAMINER**